

**REPAIR OF EARTH COVERED MAGAZINES  
FORT WINGATE DEPOT ACTIVITY  
MCKINLEY COUNTY, NM  
EPA ID # NM6213820974**

**Contract No: W912PP-08-T-0003**

*Submitted to:*



**United States Army Engineer District. Albuquerque  
4101 Jefferson Plaza NE  
Albuquerque, New Mexico 87109-3435**

*Submitted by:*

**PIKA International, Inc  
12723 Capricorn Drive, #500  
Stafford, TX 77477**

**July 2008**

**TABLE OF CONTENTS**

1.0 EXECUTIVE SUMMARY..... 1

2.0 EARTH COVERED MAGAZINE (ECM) REPAIR..... 2

3.0 LIGHTNING PROTECTION SYSTEM..... 4

**LIST OF ATTACHMENTS**

Attachment 1: Lightning Protection System Testing Data Sheet

## 1.0 EXECUTIVE SUMMARY

PIKA International, Inc. (PIKA) was contracted by the U.S. Army Engineer District, Albuquerque (CESPA) for the repair of earth covered magazines (ECMs) at the Fort Wingate Depot Activity (FWDA), McKinley County, New Mexico.

This Final Report describes the procedures, operational sequences, and resources PIKA personnel utilized to perform the tasks described in Tasks 3 and 3.1 through 3.7 of contract number W912PP-08-T-0003.

FWDA is located in northwestern New Mexico in McKinley County, approximately 8 miles east of Gallup, New Mexico. Mixed pine covering gently rolling to hilly to inaccessible terrain characterizes the landscape in and around FWDA.

FWDA is an inactive U. S. Army Depot whose former mission was to store, ship, and receive material and also to dispose of obsolete or deteriorated explosives and military munitions. Fort Wingate was originally established in 1850. In 1941, the Fort underwent major construction and expansion for the administration and igloo area. In 1971, the depot was placed in reserve status and renamed Fort Wingate Depot Activity. Since 1975, the installation has been under the administrative command of the Tooele Army Depot in Tooele, Utah. The active mission of FWDA ceased and the installation closed in January 1993, as a result of the Defense Authorization Amendments and Base Realignment and Closure Act of 1988. The installation is almost entirely surrounded by federally owned or administered lands, including both national forest and tribal lands.

The objective of this project was to provide the necessary resources and equipment to repair existing ECMs in compliance with Department of Defense (DoD) standards and specifications within DoD 6055.9-STD for storage of waste military munitions (WMM) found during investigations at FWDA. All work was performed in accordance with (IAW) the approved Work Plan dated February, 2008. The procedures detailed below were used to perform the contract SOW.

## **2.0 EARTH COVERED MAGAZINE (ECM) REPAIR**

The primary objective of the repair of ECMs was to comply with DoD standards and specifications within 6055.9-STD in order to store WMM found during the FWDA munitions and explosives of concern (MEC) investigations. PIKA personnel performed an initial survey of twelve ECMs and identified some minor repairs required. Tooele Army Depot personnel also performed an inspection and identified additional necessary repairs. Of the twelve magazines inspected eight were identified for repair. No major structural damages, such as concrete stress cracks, were noted.

Based on the initial inspections, PIKA selected the following eight (8) igloos (ECMs) as the best available for the storage of WMMs. The following list contains the igloos selected and the repairs performed in each unit. Repairs were completed from April 7 to April 28, 2008.

### **1. Igloo B-1028**

- Front Door (sanded, primed, and painted);
- Added rock at low area on midway right side and at rear of igloo;
- Cleared vegetation (50-foot perimeter);
- Vent fan (sanded, primed, and painted);
- Removed soil around buried drains; and
- Removed abandoned electrical system components.

### **2. Igloo B-1029**

- Front door (sanded, primed, and painted);
- Cleared vegetation (50-foot perimeter);
- Added rock at rear of igloo;
- Vent fan (sanded, primed, and painted);
- Removed soil around buried drains; and
- Removed abandoned electrical system components.

### **3. Igloo B1038**

- Front Door (sanded, primed, and painted);
- Cleared vegetation (50-foot perimeter);
- Added rock at rear of igloo;
- Vent fan (Sanded, primed, and painted); and
- Removed electrical system components



#### **4. Igloo B1039**

- Front door (sanded, primed, and painted);
- Cleared vegetation (50-foot perimeter);
- Added rock at rear of igloo;
- Vent fan (repaired, sanded, primed, and painted); and
- Removed abandoned electrical system components.

#### **5. Igloo B1040**

- Front door (sanded, primed, and painted);
- Cleared vegetation (50-foot perimeter);
- Added rock at rear of igloo;
- Vent fan (sanded, primed, and painted); and
- Rotated up-turned drains.

#### **6. Igloo B1041**

- Front door (sanded, primed, and painted);
- Cleared vegetation (50-foot perimeter);
- Added rock at rear of igloo;
- Vent fan (sanded, primed, and painted); and
- Rotated up-turned drain.

#### **7. Igloo B1042**

- Front door (sanded, primed, and painted);
- Cleared vegetation (50-foot perimeter);
- Added rock at rear of igloo; and
- Vent fan (repaired, sanded, primed, and painted).

#### **8. Igloo B-1043**

- Front door (sanded, primed, and painted);
- Cleared vegetation (50-foot perimeter);
- Added rock at rear of igloo;
- Vent Fan (sanded, primed, and painted)

### **3.0 LIGHTNING PROTECTION SYSTEM**

As part of the repairs, the lightning protection system was tested and minor repairs were made, including tightening and repairs of connection points. The results of the resistance testing are included as Attachment 1. All station to station resistance readings were less than the maximum resistance value of one ohm.

**ATTACHMENT 1**  
**LIGHTNING PROTECTION SYSTEM TESTING DATA SHEET**

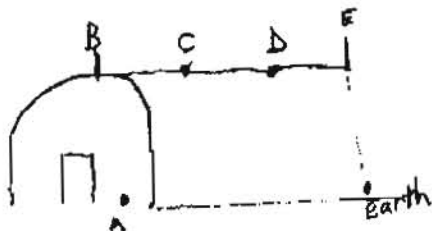
# SOWERS ELECTRIC LIC # 022180

Robert Sowers  
 OWNER  
 PO BOX 1143  
 301 DEE ANN ST. - 87301  
 GALLUP, NM 87305

Telephone 505-722-3134  
 Fax 505-722-3134

Enclosed are the data sheets with earth ground resistance and station to station continuity readings, after various tightening and repairs of connection points.

Unit #	Missing	Front side (A to earth)	Station A - B	Station B - C	Station C - D	Station D - E	Back side (E to Earth)
B 1028	1 hub & 2 rods	1.74	.05	.035	.04	.055	1.69
B 1029	2 rods	.98	.03	.03	.038	.03	.975
B 1038	2 hubs & 2 rods	1.03	.038	.0375	.04	.035	.96
B 1039	2 rods	.96	.03	.04	.04	.045	.94
B 1040	2 rods	.98	.03	.045	.04	.03	.97
B 1041	2 rods	.92	.03	.03	.035	.035	.95
B 1042	1 hub & 2 rods	1.17	.033	.03	.03	.029	1.1
B 1043	1 hub & 2 rods	.92	.03	.028	.03	.035	.96



*Robert Sowers*  
 Robert Sowers